

# Notice of Allowability

Application No.

10/730,237

Examiner

Allen Wong

Applicant(s)

KANG, JUNG-SUN

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment on 10/10/07, and examiner's amendment on 11/8/07.
2. ☒ The allowed claim(s) is/are 1 and 3-9, renumbered as claims 1-8.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 11/8/07.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Allen Wong  
Primary Examiner  
Art Unit 2621

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Robert Newman on November 8, 2007.

The application has been amended as follows:

On claim 1, line 20, after "values;", --and-- has been inserted.

On claim 1, line 24, "value." has been changed to --value, wherein M is an operational natural number for calculating SAD per pixel.--

### ***Allowable Subject Matter***

1. Claims 1 and 3-9 are allowed.
2. The following is an examiner's statement of reasons for allowance: The prior art does not specifically disclose the combination of limitations of claim 1: a motion estimator of a video encoder, comprising: a search region data memory for storing video data of a previous video frame; a macroblock data memory for storing macroblock data of a current video frame; a first sub sampling circuit for sub-sampling by ratio M: 1 the video data of a previous frame read from the search region data memory in response to a sub-sampling rate control signal; a data array circuit for arraying video data outputted from the first sub-sampling circuit so that motion vector estimation candidates can be

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outputted sequentially to a second sub-sampling circuit for sub-sampling, by ratio  $M$ : 1, current video frame data read from the macroblock data memory in response to the sub-sampling rate control signal; a macroblock measure circuit for receiving the current frame video data read from the macroblock data memory to calculate a sum of absolute differences (SAD) between a mean intensity of a macroblock and an intensity of each pixel of the macroblock; a search region deciding circuit for outputting a search region decision signal based on the sum of absolute differences between the mean intensity of the macroblock and the intensity of the each pixel of the macroblock; a processing element (PE) array network for sequentially calculating a SAD value of data outputted from the first sub-sampling circuit and search region data outputted from the data array circuit, according to the search region decision signal, to sequentially output a plurality of SAD values; and a motion vector comparator for receiving the plurality of SAD values sequentially outputted from the PE array network, and comparing each SAD value with a previous SAD value, to detect a minimum SAD value as a motion vector value, wherein  $M$  is an operational natural number for calculating SAD per pixel.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Contact Information***

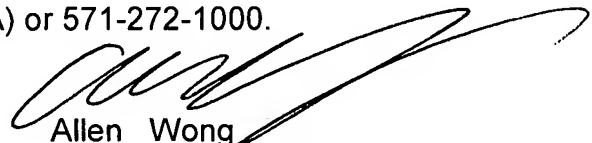
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341.

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The examiner can normally be reached on Mondays to Thursdays from 8am-6pm  
Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Allen Wong  
Primary Examiner  
Art Unit 2621

AW  
11/8/07